

Claims

What is claimed is:

1. A graphical user interface comprising:
a cluster indicator that represents a group of n objects visualized in an image space, where n is a natural number greater than or equal to 0; and
at least one graphical object dynamically visually associated with the group of objects represented by the cluster indicator based on a proximity of the at least one graphical object relative to the cluster indicator.
2. The interface of claim 1, further comprising a plurality of clusters, each of the plurality of clusters having a respective cluster indicator, membership of the at least one graphical object to one of the plurality of clusters being determined based on the proximity of the at least one graphical object relative to the respective cluster indicator of the one cluster.
3. The interface of claim 2, further comprising a clustering control that automatically associates the at least one graphical object with the one cluster.
4. The interface of claim 3, the clustering control limiting automatic association of the at least one graphical object to when the at least one graphical object is within a threshold distance of the respective cluster indicator of the one cluster.
5. The interface of claim 2, the plurality of clusters having a plurality of respective operating states based on interaction with a pointer represented in the image space, wherein a cluster selected via the pointer is capable of moving relative to the image space and other of the plurality of clusters, such that when the moving cluster is within a predetermined distance of another of the plurality of clusters, the another cluster is pushed away from the moving cluster.

6. The interface of claim 2, further comprising a cluster avoidance control that controls movement of the another cluster from a first position to a second position in response to the moving cluster being within the predetermined distance of the another cluster and, if the moving cluster has moved sufficiently away from the first position, the cluster avoidance control returning the another cluster to approximately the first position.
7. The interface of claim 2, the respective cluster indicators including different graphical elements to visually distinguish membership of the plurality of clusters.
8. The interface of claim 7, the at least one graphical object including a graphical element that substantially matches the graphical element of the one respective cluster indicator to which the at least one graphical object is associated to identify cluster membership.
9. The interface of claim 8, the graphical elements of the cluster indicators and of the at least one graphical object further comprising respective banners to indicated cluster membership.
10. The interface of claim 9, each of the banners further comprising at least one of a graphical and audio feature.
11. The interface of claim 1, the image space comprising a simulated three-dimensional image space.
12. The interface of claim 1, the cluster indicator comprising an annotation associated with the cluster indicator.
13. The interface of claim 12, the annotation further comprising at least one of a textual annotation and an audio annotation associated with audio data.

14. The interface of claim 1, further comprising an import component operative import selected objects into the interface, such that a graphical object associated with each respective imported object is visually represented in the image space.

15. The interface of claim 14, further comprising a clustering component operative to visually associate the graphical objects of respective imported objects with corresponding cluster indicators.

16. The interface of claim 15, the clustering component visually associating the graphical objects of imported objects with corresponding cluster indicators in the image space based on metadata of the imported objects.

17. The interface of claim 16, the clustering component visually associating the graphical objects of imported objects with corresponding cluster indicators in the image space based on similarities between the imported objects.

18. The interface of claim 14, the import component being operative to import graphical objects from at least one of a data file and a storage medium associated of a device external to a device running the interface.

19. The interface of claim 1, further comprising a scaling component operative to scale the at least one graphical object and the cluster indicator relative to the image space.

20. The interface of claim 19, the image space comprising a visualized surface relative to which the at least one graphical object and the cluster indicator are arranged, the scaling component performing scaling of the at least one graphical object and the cluster indicator without scaling the surface.

21. The interface of claim 20, the scaling component being operative to scale the at least one graphical object an amount proportionally different from the cluster indicator in response to a change in scaling.

22. The interface of claim 1, further comprising a plurality of the cluster indicators that represent different clusters, at least one of the plurality of cluster indicators comprising a cluster annotation, a plurality of the graphical objects visually associated with respective ones of the cluster indicators, the at least one graphical object being associated with the one of the plurality of cluster indicators such that the cluster annotation also is associated with the at least one graphical object.

23. The interface of claim 22, the at least one graphical object having a plurality of respective operating states based on interaction with a pointer represented in the image space, wherein, in response to selection of the at least one graphical object with the pointer, the at least one graphical object is capable of moving relative to the image space.

24. The interface of claim 23, further comprising a clustering control operative to dynamically associate the at least one graphical object with another of the plurality of cluster indicators in response to the at least one graphical object being moved to a position that is closer to the another cluster indicator than to the one of the plurality of cluster indicator.

25. The interface of claim 24, the at least one graphical object having cluster data that varies according to with which of the plurality of cluster indicators the at least one graphical object is associated.

26. The interface of claim 25, the cluster data further comprising at least a portion of cluster annotations of the cluster indicator with which the at least one graphical object is associated.

27. The interface of claim 26, the at least one graphical object further comprising programmable object annotations specific to the at least one graphical object.
28. The interface of claim 1, further comprising an export control operative to control sending data associated with the at least one graphical object to a desired destination.
29. The interface of claim 28, the desired destination comprising at least one of an external device, an application program, a data file and a website.
30. The interface of claim 1, further comprising an export control operative to control sending a cluster to a desired destination, the cluster comprising data associated with the cluster indicator, including the at least one graphical object.
31. The interface of claim 1, the at least one graphical object comprising a two-dimensional image.
32. The interface of claim 31, the two-dimensional image comprising a graphical representation of a photograph.
33. A graphical user interface to facilitate viewing of graphical representations of data in an image space, comprising:
- at least one cluster indicator visualized in the image space to represent a group of n objects, where n is a natural number greater than or equal to 0;
 - at least one graphical object in the image space visually associated with the at least one cluster indicator; and
 - a scaling component operative to selectively scale the at least one graphical object and the at least one cluster indicator independently of the image space.
34. The interface of claim 33, the image space further comprising a simulated three-dimensional image space that includes a visualized surface relative to which the at least one

graphical object and the at least one cluster indicator are arranged, the scaling component performing scaling of the at least one graphical object and the cluster indicator without scaling the surface.

35. The interface of claim 33, the scaling component being operative to scale the at least one graphical object an amount proportionally different from the at least one cluster indicator in response to a change in scaling.

36. The interface of claim 33, the at least one graphical object being associated with the at least one cluster indicator based on a relative distance between the at least one graphical object and the cluster indicator.

37. The interface of claim 36, further comprising a plurality of clusters and a plurality of graphical objects, each of the plurality of clusters having a respective cluster indicator, membership of at least some of the plurality of graphical object to respective ones of the plurality of clusters being determined based on the relative distance between each of the at least some of the plurality of graphical objects and the plurality of cluster indicators.

38. The interface of claim 37, further comprising a clustering control that automatically associates each of the plurality of graphical objects with a respective one of the plurality of cluster indicators.

39. The interface of claim 38, the clustering control limiting automatic association of the graphical objects to where each graphical object is within a threshold distance of the respective one of the plurality of cluster indicators.

40. A graphical user interface to facilitate management of and/or access to data, comprising:

a plurality of cluster indicators visualized in the image space, each cluster indicator representing a cluster of n objects, where n is a natural number greater than or equal to 0;

at least one graphical object visually associated with one of the plurality cluster indicators;

cluster annotation associated with the one cluster indicator; and

at least a portion of the cluster annotation of the one cluster indicator also being associated with the at least one graphical object as a function of the association between the at least one graphical object and the one cluster indicator.

41. The interface of claim 40, the at least one graphical object having a plurality of respective operating states based on interaction with a pointer represented in the image space, wherein, the at least one graphical object is capable of moving relative to the image space in response to manipulation of the at least one graphical object with the pointer.

42. The interface of claim 41, further comprising a clustering control operative to dynamically associate the at least one graphical object with the another cluster indicator in response to the at least one graphical object being moved to a position that is closer to the another cluster indicator than to the one cluster indicator.

43. The interface of claim 42, the at least one graphical object having cluster data that varies as a function of the association between the at least one graphical object and a corresponding cluster indicator.

44. The interface of claim 43, the cluster data further comprising cluster annotation data that varies based upon with which corresponding one of the plurality of cluster indicators the at least one graphical object is associated.

45. The interface of claim 44, the at least one graphical object further comprising programmable object annotations that are independent of an association between the at least one graphical object and a corresponding cluster indicator with which the at least one graphical object is associated.

46. The interface of claim 40, the at least one graphical object having cluster data that varies as a function of the association between the at least one graphical object and a corresponding cluster indicator, the cluster data including at least one graphical element visually represented with the at least one graphical object in the image space to indicate membership with the corresponding cluster indicator with which the at least one graphical object is associated.

47. The interface of claim 46, the graphical element of the at least one graphical object substantially matching a graphical element of the corresponding cluster indicator to which the at least one graphical object is associated to indicate common cluster membership.

48. The interface of claim 47, the graphical elements of the corresponding cluster indicator and the at least one graphical object further comprising respective color-coded banners.

49. A data structure for a graphical user interface comprising:
at least one cluster data structure comprising:
a cluster indicator field that stores location information for a cluster indicator that graphically represents the at least one cluster, and
a second cluster field that stores information to facilitate identifying the at least one cluster; and
an object data structure comprising:
a location field that stores location information for a graphical representation of the object;
a cluster field that stores association information indicating an association between the object data structure and the at least one cluster, the association information being determined as a function of the location information for the object relative to the location information for the cluster.

50. The data structure of claim 49, the second cluster field comprising at least one of a title and an annotation field that contains the information to facilitate identifying the at least one cluster, the cluster field of the object data structure further comprising an annotation field that stores information derived from the information contained in the at least one of a title and an annotation field.

51. The data structure of claim 50, the information in the annotation field of the cluster field of the object data structure dynamically changing in response to a change in the association information in the cluster field thereof.

52. The data structure of claim 49, the object data structure further comprising an image field that stores graphical data associated with the object, including the graphical representation of the object.

53. A graphical user interface, comprising:

means for representing of a group of n objects visualized relative to a surface in an image space, where n is a natural number greater than or equal to 0;

means for graphically representing data in the image space; and

means for visually associating the means for graphically representing data with the group represented by the means for representing the group of objects as a function of a distance between the means for graphically representing data and the means for representing the group of objects.

54. The interface of claim 53, the means for graphically representing data comprising a plurality of graphical objects, the interface further comprising means for automatically associating each of the graphical objects with a respective means for representing a group of objects based on the distance between the each of the graphical objects and the respective means for representing the group of objects.

55. The interface of claim 53, further comprising means for moving the group of objects in the image space relative to the surface, such that when the group of objects is within a predetermined distance of another group of objects, the another group is moved away from the moving cluster.

56. The interface of claim 53, further comprising means for selectively scaling the means for graphically representing data and the means for representing the group of objects independently of the surface in the image space.

57. The interface of claim 56, the means for scaling being operative to scale the means for graphically representing data an amount proportionally different from the means for representing the group of objects in response to a change in scaling.

58. A method to facilitate management or viewing of data, comprising:
displaying at least one cluster indicator in an image space to represent a cluster that can include n number of objects, where n is an integer greater than or equal to zero;
providing at least one graphical object to represent data in the image space; and
visually associating the at least one graphical object with the at least one cluster as a function of a distance between the at least one graphical object and the at least one cluster indicator to indicate cluster membership by the association.

59. The method of claim 58, further comprising:
displaying a plurality of cluster indicators in the image space, each of the plurality of cluster indicators representing a respective cluster; and
determining membership of the at least one graphical object to one of the plurality of clusters based on the distance between the graphical object and the one cluster indicator.

60. The method of claim 59, a plurality of graphical objects being displayed in the image space, the method further comprising automatically associating each of graphical objects

with one respective cluster based on the distance between each respective graphical object and the plurality of cluster indicators.

61. The method of claim 61, further comprising:

moving at least one of the plurality of clusters relative to the image space and other of the plurality of clusters; and

graphically pushing another of the plurality of clusters away from the moving cluster when the moving cluster is within a predetermined distance of the another of the plurality of clusters.

62. The method of claim 58, further comprising providing a substantially common graphical element at each of the at least one graphical object and the at least one cluster indicator to visualize cluster membership.

63. The method of claim 58, further comprising simulating the image space as a three-dimensional image space having a surface, the at least one graphical object and the at least one cluster indicator being arranged relative to the surface.

64. The method of claim 58, further comprising associating an annotation with the at least one cluster indicator.

65. The method of claim 59, further comprising:

importing at least one selected object into the image space, such that an associated graphical object for the imported object is visually represented in the image space; and

visually associating the graphical objects of respective imported object with corresponding cluster indicators.

66. The method of claim 58, further comprising scaling the at least one graphical object and the at least one cluster indicator relative to the image space.

67. The method of claim 66, the image space including a visualized surface relative to which the at least one graphical object and the cluster indicator are disposed, the scaling component performing scaling of the at least one graphical object and the at least one cluster indicator without scaling the surface.

68. The method of claim 66, the scaling being performed relative to the at least one graphical object an amount proportionally different from the at least one cluster indicator in response to change in scaling.

69. The method of claim 58, the at least one cluster indicator including an annotation, the at least one graphical object associated with the at least one cluster indicator inheriting at least a portion of the annotation from the at least one cluster indicator based on the association.

70. The method of claim 58, the image space including a plurality of cluster indicators that represent respective clusters, the method further comprising:

selecting the at least one graphical object

moving the selected at least one graphical object in the image space; and

dynamically associating the moving graphical object with another of the plurality of cluster indicators in response to the moving graphical object being moved to a position that is closer to the another cluster indicator than to the at least one cluster indicator.

71. The method of claim 70, further comprising modifying cluster data of the at least one graphical object to reflect a change in cluster membership based on the dynamic association with the another cluster indicator.

72. The method of claim 58, further comprising sending the cluster represented by the at least one cluster indicator to a desired destination.

73. The method of claim 58, further comprising sending at least some of the data represented by the at least one graphical object to a desired destination.

74. A computer-readable medium having computer-executable instructions for:
displaying at least one cluster indicator in an image space to represent a cluster that can include n number of objects, where n is an integer greater than or equal to zero;
providing at least one graphical object to represent data in the image space; and
visually associating the at least one graphical object with the at least one cluster as a function of a distance between the at least one graphical object and the at least one cluster indicator to indicate cluster membership by the association.